

### REMARKS

The Office Action dated August 13, 2007 has been received and carefully studied.

A Request for Continued Examination is filed herewith.

The Examiner maintains the rejection of claim 8 under 35 U.S.C. §103(a) as being unpatentable over Santo et al., JP 2000-211239.

The rejection is respectfully traversed.

The present invention is directed to providing a near-infrared absorbing compound which does not contain antimony and is excellent in stability, particularly in heat resistance compared other antimony-free counter ions, and a near-infrared absorbing filter suitable for a plasma display panel, prepared using the claimed near-infrared absorbing compound (page 2, lines 20-26 of the instant specification). The present invention has achieved this objective by combining the specific diimonium compounds claimed with the specific counter ion claimed. This significant technical feature of the present invention is neither disclosed nor suggested in the cited references, as explained below.

For the following reasons, Applicants respectfully but vigorously submit that no *prima facie* case of obviousness has been established.

The courts have held that the fact that a claimed compound may be encompassed by a disclosed generic formula does not by itself render that claimed compound obvious. *In re Jones*, 21 U.S.P.Q.2d 1941, (Fed. Cir. 1992). There must be something in the

reference that motivates the selection of the particular constituents that make up the claimed compound in order for obviousness to be established. For example, in the case of *In re Baird*, 29 U.S.P.Q.2d 1550 (Fed. Cir. 1994), the Federal Circuit found a claim directed to a flash fusible toner comprising a binder resin which is a bisphenol A polyester containing an aliphatic di[carboxylic] acid selected from the group consisting of succinic acid, glutaric acid and adipic acid to be nonobvious over a reference that disclosed a generic formula that encompassed bisphenol A, and that disclosed 20 typical dicarboxylic acids, including the succinic acid, glutaric acid and adipic acid recited in the claim. The Court reasoned that the generic formula encompassed more than 100 million different diphenols, only one of which is bisphenol A, and that the reference did not teach or fairly suggest the selection of bisphenol A. The Court also noted that the reference indicated a preference leading away from the claimed compounds.

Analyzing the instant rejection of claim 8 in this context, paragraph [0027] of Santo discloses 36 different possible anions, of which one is trifluoro methanesulfonic acid ion. Since  $R_1$ - $R_8$  in the generic Formula [II] of Santo et al. can independently be an alkynyl group, an alkenyl radical, an alkyl group, an alkoxyalkyl group or an aralkyl radical, when these substituents are considered in combination with the 36 different possible anions, a very large number of compounds are encompassed by the generic Formula [II]. This is consistent with the facts of the *Baird* case.

The next step in the analysis is whether any direction is given in Santo to choose the particular  $R_1$ - $R_8$  groups and the particular anion recited in the instant claim 8. In this context, Tables 9-12 of Santo show 38 specific compounds of the Formula [II]. Among these, only five compounds, namely, Formulas [II]-4, [II]-16, [II]-17, [II]-19 and [II]-25, are compounds wherein  $R_1$ - $R_8$  are branched or straight chain butyl or pentyl groups as required by the instant claim 8. The anions of these compounds are Br,  $SbF_6$ ,  $ClO_4$  and  $NO_3$ . Accordingly, these specific disclosures of species within the genus of Formula [II] in Santo do not motivate or in any way "fairly suggest" the selection of  $CF_3SO_3$  as the anion when the proper alkyl groups are chosen. There is nothing else in the disclosure of Santo that motivates the selection of the particular R groups and the  $CF_3SO_3$  anion to arrive at the compounds of claim 8.

As stated in MPEP §2144.08 ("Obviousness of Species When Prior Art Teaches Genus"), when a single prior art reference discloses a genus encompassing the claimed species but does not expressly disclose the particular claimed species, Office personnel should attempt to find additional prior art to show that the differences between the prior art primary reference and the claimed invention as a whole would have been obvious. Presumably this is the basis for the Examiner's citation of the Sugimachi et al. reference, since it is cited to show that the  $CF_3SO_3$  anion is well known to one skilled in the art.

Importantly, however, Sugimachi et al. expressly discloses a preference for the anion in the diimmonium compound as  $BF_4^-$ ,  $PF_6^-$ ,

ClO<sub>4</sub><sup>-</sup> or SbF<sub>6</sub><sup>-</sup> (see paragraph [0048]). This is again consistent with the facts of the *Baird* case, where the Court stated:

"Given the vast number of diphenols encompassed by the generic diphenol formula in [the prior art reference to] Knapp, and the fact that the diphenols that Knapp specifically discloses to be 'typical', 'preferred', and 'optimum' are different from and more complex than bisphenol A, we conclude that Knapp does not teach or fairly suggest the selection of bisphenol A." (29 U.S.P.Q.2d at 1552).

Even more compelling is the fact that these same four anions preferred by Sugimachi et al. are also expressly disclosed as suitable anions in Santo et al. Thus, as in the *Baird* case, the prior art teaches a preference leading away from the claimed compounds. No preference is articulated in the cited art for the selection of the CF<sub>3</sub>SO<sub>3</sub> anion in the compounds recited in the instant claim 8. Accordingly, no *prima facie* case of obviousness has been established.

Furthermore, the diimonium compound recited in Santo is to improve the lightfastness of an image by incorporating the compound into an ink-jet recording medium ([0018]). However, with regard to a heat resistance of the diimonium compound, Santo merely describes, "the kiss coat of said coating liquid was carried out . . . at 145 degrees C" ([0122]), but it does not specifically mention about heat stability demonstrated by an evaluating test.

On the other hand, Sugimachi discloses a near infrared ray absorbing filter which keeps its near infrared ray blocking efficiency for a long period of time at a high temperature ([0018]). However, the improved heat resistance thereof can be

obtained by adding a copper complex and/or a copper compound ([0018]). Further, all of the working examples in Sugimachi contain such a copper complex, whereas the comparative examples therein do not ([0127] and TABLE 1).

That is, Santo neither teaches nor suggests how to improve the heat stability of a diimonium compound, and Sugimachi uses a different method to improve the heat resistance of a near infrared ray absorbing filter. Sugimachi addresses the heat resistance completely differently than the present invention, further evidencing no suggestion to choose the  $\text{CF}_3\text{SO}_3$  anion among the numerous anions disclosed by Santo.

With regard to evidence of unexpected results, submitted herewith is a Declaration of Mr. Toshitaka Toriniwa. The Toriniwa Declaration shows the decomposition of the claimed diimonium compound recited in Example 8 of the instant specification, in comparison with those of Comparative Examples 3 and 4. From the measurement result, it has been demonstrated that the claimed compound is excellent in heat stability over the compounds of Comparative Examples 3 and 4.

The Examiner states that Comparative Example 3 and 4 are not the direct comparison of the cited prior art compounds [II]-4 and [II]-15 in the Office Action. However, Applicants respectfully submit that compound [II]-15 is not the closest prior art. Compound [II]-15 of Santo cited by the Examiner has n-propyl groups for  $\text{R}_1$ ,  $\text{R}_2$ ,  $\text{R}_5$  and  $\text{R}_6$ . In contrast, the R groups in the compound of the instant claim 8 are limited to butyl and pentyl groups. The compounds of Comparative Examples 3 and 4, wherein

the R groups are n-butyl groups, are just as close prior art as the Santo compound [II]-4, and closer than Santo compound [II]-15. Accordingly, Applicants respectfully submit that the evidence is highly probative of unexpected results.


Applicants note that in regard to the Examiner's conclusion that the evidence of record does not establish unexpected results, Table 8 in the specification demonstrates that the near-infrared absorbing filters containing the claimed compound show small changes in the  $b^*$  value relative to those in the comparative examples (page 30, line 6 from the bottom to page 31). The change of  $b^*$  value means the stability of the compound contained in the filter, which directly correlates to the degree of degradation of the filter per se. The Examiner apparently has focused only on  $b^*$  value after 14 days. However, how the  $b^*$  value changes from the initial state is also important for degree of degradation; it is insufficient to merely evaluate the  $b^*$  value after 14 days. This can be clarified graphically, as shown in the graph of the data from Table 8 set forth on page 3 of the Toriniwa Declaration. The graph shows that the claimed compounds (Examples 8 and 10) have small changes of  $b^*$  value from the initial values and small degrees of degradation with passing time, compared to the comparative compounds (Comparative Examples 3 and 4). This indicates that the near-infrared absorbing filters containing the claimed compounds are excellent in stability under the condition of high temperature and high humidity (page 31, line 4 from the bottom to page 32, line 2). This remarkable advantageous effect of the claimed invention is

not predictable from the prior art.

Accordingly, Applicants respectfully submit that no *prima facie* case of obviousness has been established, and the claimed compounds exhibit unexpected results.

Reconsideration and allowance are respectfully requested in view of the foregoing.

Respectfully submitted,

  
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